

( ) Claims

1. A wastewater treatment apparatus comprising an obligatory anaerobic tank for bringing wastewater containing a nitrogen-containing dye into contact with sulfate-reducing bacteria under obligatory anaerobic conditions, a nitrification tank for bringing the wastewater into contact with nitrifying bacteria under aerobic conditions and a denitrification tank for bringing the wastewater into contact with the denitrifying bacteria under anaerobic conditions.

2. A wastewater treatment apparatus of Claim 1, wherein the obligatory anaerobic tank, the denitrification tank and the nitrification tank are disposed in the order of mention and a portion of the treated water discharged from the nitrification tank is caused to return and circulate to the denitrification tank.

3. A wastewater treatment apparatus of Claim 1, wherein the obligatory anaerobic tank, the nitrification tank and the denitrification tank are disposed in the order of mention and a re-aeration tank for bringing BOD decomposing bacteria into contact with the wastewater under aerobic conditions is disposed downstream of the denitrification tank.

4. A wastewater treatment apparatus, wherein a denitrification tank for bringing wastewater containing a nitrogen-containing dye into contact with sulfate reducing

bacteria and denitrifying bacteria under obligatory anaerobic conditions and a nitrification tank for bringing the wastewater into contact with nitrifying bacteria under aerobic conditions are disposed in the order of mention, whereby a portion of the treated water discharged from the nitrification tank is caused to return and circulate to the denitrification tank.

5. A wastewater treatment apparatus of Claim 1, wherein the bacteria have been immobilized by a microorganism immobilization support in at least one tank selected from the obligatory anaerobic tank, the nitrification tank and the denitrification tank.

6. A wastewater treatment apparatus of Claim 3, wherein the bacteria have been immobilized by a microorganism immobilization support in at least one tank selected from the obligatory anaerobic tank, the nitrification tank, the denitrification tank and the re-aeration tank.

7. A wastewater treatment apparatus of Claim 4, wherein the bacteria have been immobilized by a microorganism immobilization support in at least one tank selected from the nitrification tank and the denitrification tank.

8. A wastewater treatment apparatus of Claim 5, wherein the microorganism immobilization support is at least one support selected from gelled support, plastic support and fibrous support.

9. A wastewater treatment apparatus of Claim 8, wherein the gelled support is a polyvinyl alcohol hydrogel.

10. A method of treating wastewater containing a nitrogen-containing dye, which comprise the following steps (1) to (3):

(1) an obligatory anaerobic step for bringing the wastewater containing a nitrogen-containing dye into contact with sulfate reducing bacteria under obligatory anaerobic conditions;

(2) a nitrification step for bringing the wastewater into contact with nitrifying bacteria under aerobic conditions; and

(3) a denitrification step for bringing the wastewater into contact with denitrifying bacteria under anaerobic conditions.